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SECRETARY OF THE AIR FORCE**



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Space, Missile, Command and Control

EVALUATION OF GROUND RADAR SYSTEMS

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This instruction implements AFD 13-1, *Theater Air Control Systems*. Headquarters (HQ) Air Combat Command (ACC)/DOY is the MAJCOM office of primary responsibility (OPR) for this instruction. Offices of collateral responsibility (OCR) for this instruction are HQ Pacific Air Forces (PACAF)/DOY, HQ US Air Forces Europe (USAFE)/DOY, HQ ACC/DOG and HQ Air National Guard (ANG)/C4. This instruction provides guidance and procedures for the Air Force program for evaluating ground surveillance radar systems (fixed, tethered and mobile). This instruction applies to all ground radar units assigned to or gained by HQ ACC/DOY, HQ PACAF/DOY, HQ USAFE/DOY, HQ AETC/DOF, HQ ACC/DOG and HQ ANG/C4. It does not apply to US Air Force Reserve (USAFR) units and members. Affected systems include Joint Surveillance, North Warning, Tethered Aerostat Radar, North Atlantic Defense, Ground Theater Air Control Systems (GTACS), and Hemispheric Radar. Major Commands (MAJCOM) are to forward proposed MAJCOM-level supplements to this volume to HQ USAF/XOOY, through HQ ACC/DOY, for approval prior to publication in accordance with (IAW) AFD 13-1. Copies of MAJCOM-level supplements, after approved and published, will be provided by the issuing MAJCOM to HQ USAF/XOOY, HQ ACC/DOY and the user MAJCOM and National Guard Bureau OPRs. Field units below MAJCOM level will forward copies of their supplements to this publication to their parent MAJCOM OPR for post publication review. Send comments and suggested improvements to this publication on AF Form 847, *Recommendation for Change of Publication*, through channels, to HQ ACC/DOY, 205 Dodd Blvd, Suite 101, Langley AFB VA 23665-2789.

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(ACC) AFI 13-101, 29 October 2004, is supplemented as follows. This instruction provides guidance and procedures for the Air Combat Command program for evaluating ground surveillance radar systems (fixed, tethered and mobile). This publication applies to the Air National Guard (ANG) when published in ANGIND 2. It does not apply to United States Air Force Reserve (USAFR). Ensure that all records created as a result of processes prescribed in AFMAN 37-123 (to be replaced by AFMAN 33-363) are maintained in accordance with this manual, and are disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://afrims.amc.af.mil>. Contact supporting records managers as required. Send recommended changes to this publication on AF Form 847, **Recommendation for Change of Publication**, through channels to HQ ACC/A3YG, 205 Dodd Blvd, Suite 101, Langley AFB VA 23665-2789.

SUMMARY OF CHANGES

This revision reorganizes text and updates references and addresses. It deletes the radar system evaluation course, the requirement for managing the technical repository for Air Force radar systems evaluations, and the technical and engineering consultation for radar related matters.

(ACC) This revision establishes the ACC Ground Radar System Evaluation Program and reflects terminology used in AFI 13-101; Revises the radar systems (paragraph **1.1.**); Deletes the responsibilities for ACC/DRC and Air Control Groups (ACG) (paragraph **1.3.**); Identifies TPS-75 evaluation services to ACC/A60 (paragraph **1.3.1.1.3. (Added)**); Reorganizes text, office symbols and changes requirements and procedures (paragraph **1.3.1.1.4. (Added)**); Updates the responsibilities for ACC/A60 (paragraph **1.3.1.2.**); Deletes requirement for the ADS to identify special and periodic radar evaluation requirement to the 84 RADES (paragraph **1.3.1.8.1. (Added)**); Deletes the 3 year evaluation schedule (paragraph **1.3.1.9.1. (Added)**); Adds for Numbered Air Forces (paragraph **1.3.1.9.2. (Added)**); Adds 84 RADES assists with C2 systems integration and continuous performance monitoring (paragraph **2.3.**); Changes Data Quality Monitor (DQM) to Air Surveillance Technician (AST) (paragraph **3.4.6.4. (Added)**.); Changes ECM/ECCM Logbook to the Operations Logbook (paragraph **3.4.7.3. (Added)**); Adds Requests for support (paragraph **4.1.**). A bar (|) indicates a changes since last edition.

Chapter 1

POLICY AND CONCEPTS

1.1. Introduction. Radar sensors and systems play a vital role in tactical, air defense and air traffic control. Many special types of configurations of radars are installed in numerous operational environments. It is imperative the capabilities and limitations of each radar sensor, command and control (C2) and system be determined so they can be configured to provide optimum performance and effectively meet their operational requirements.

1.1. (ACC) Radar Systems. A transportable radar system is transported on mobilizers, aircraft or trucks. A Fixed Radar System is permanently installed at a fixed location.). A Tethered Aerostat Radars is a lighter-than-air balloon containing a look-down radar surveillance system. The radar improves the detection and tracking of low-level targets over ground-based radars. Target information is forwarded automatically to the appropriate Air Defense Sectors (ADSs).

1.1.1. **(Added-ACC) Radar Coverage Indicator (RCI).** A mechanical computer device which predicts aircraft detection/fade range as a function of aircraft reflectivity, antenna electrical tilt, absolute flight altitude, and horizon screening angle.

1.2. Policy. The Air Force policy is to ensure tactical and strategic air defense ground radars, C2 systems, and electronic resources are installed, maintained, and operated in a high state of readiness to provide a quick reaction to the threat of both limited and general wars. Ground electronics evaluation provides management with a tool for determining the capability of each radar to detect, identify, track and control aircraft; determine aircraft height; provide ground-to-air communications; and to maximize operational readiness and flight safety. In addition, ground electronics evaluations determine the configuration for optimal performance in a dynamic radar environment. Lastly, the C2 system evaluation further ensures the radar sensors are properly integrated into C2 system and the C2 system properly processes tracks and displays the radar data.

1.3. RESPONSIBILITIES

1.3. (ACC) Responsibilities: Headquarters ACC is responsible for the following functions:

1.3.1. HQ ACC/DOY is the OPR for this instruction; HQ USAFE/DOY, HQ PACAF/DOY, HQ AETC/DOF, HQ ACC/DOG and HQ ANG/C4 are the OCRs.

1.3.1.1. HQ ACC/DOY will review all requirements for 84 Radar Evaluation Squadron (RADES) support. Radar systems that feed data into a NORAD Region Air Operations Center (RAOC) or Air Defense Sector (ADS) as a part of Homeland Air Surveillance (NORTHCOM AOR) will receive top priority over all other requirements.

1.3.1.1.1. **(ACC) HQ ACC/A3Y will:**

1.3.1.1.1.1. **(Added-ACC)** Review evaluation reports and recommendations to determine limitations of ACC electronic equipment and their affect on mission capability.

1.3.1.1.1.1.1. **(Added-ACC)** Initiate corrective actions as required.

1.3.1.1.1.1.2. **(Added-ACC)** Use evaluation reports for planning purposes.

1.3.1.1.2. **(Added-ACC)** Establish and monitor ground electronic evaluation program to ensure command-wide readiness of ACC radar units.

1.3.1.1.3. **(Added-ACC)** For TPS-75s Tactical Radar Systems ensure that evaluation services for operationally tasked and test support systems are identified to HQ ACC/A6O by 1 Sept of each year. Support assets, such as training, will be scheduled as required based on need.

1.3.1.1.4. **(Added-ACC)** Provide assistance to A6O and 84 RADES/SCX for establishment of policy and requirement.

1.3.1.1.5. **(Added-ACC)** Provide staff assistance as required.

1.3.1.2. HQ ACC/SCW is the tasking authority for 84 RADES evaluation activity.

1.3.1.2. **(ACC)** HQ ACC/A6O will:

1.3.1.2.1. **(Added-ACC)** Provide technical oversight of test plans and procedures.

1.3.1.2.2. **(Added-ACC)** Review evaluation reports and recommendations to provide a technical analysis in support of operational decisions and system upgrades or replacements.

1.3.1.3. **(Added-ACC)** The First, Eighth, Ninth and Twelfth Air Forces will provide aircraft and aircrews for flying support of baseline, special, system, and periodic evaluations of subordinate ACC radar units.

1.3.1.4. **(Added-ACC)** 1 AF/A3Y is the focal point for CONUS Joint Surveillance System/Air Defense Sector Operations (JSS/ADS) radar evaluation and will:

1.3.1.4.1. **(Added-ACC)** Coordinates and consolidates all fixed and aerostat radar evaluation requirements with the FAA (IAW FAA Order 6430.7) for the JSS and submit these requirements as necessary, including:

1.3.1.4.1.1. **(Added-ACC)** Initial and follow-on baseline evaluations.

1.3.1.4.2. **(Added-ACC)** Special evaluations, particularly scheduled modifications.

1.3.1.4.3. **(Added-ACC)** System evaluations.

1.3.1.7. **(Added-ACC)** The 84 RADES as the ACC evaluation agency will perform the tasks identified in AFI 13-101, [Chapter 3](#).

1.3.1.7.1. **(Added-ACC)** Develop evaluation operating instructions (EOI) for evaluating radars.

1.3.1.7.2. **(Added-ACC)** Develop test plans or assist with test plan development to enable implementing and OT&E commands to develop and test radar sensors and systems.

1.3.1.7.3. **(Added-ACC)** Forward an evaluation notification letter to the requesting organization NLT 30 days prior to CONUS evaluations and approximately 45 days prior to all others. The letter will include the purpose of the evaluation, authority, support requirements, schedule of activities, points of contact, and other pertinent information as required.

1.3.1.7.4. **(Added-ACC)** Debrief the radar site commander or FAA site manager upon completion of the evaluation. When appropriate, also debrief the MAJCOM, ADS, or higher headquarters.

1.3.1.7.5. **(Added-ACC)** Transmit a quick look message, when appropriate, to the radar site commander or FAA site manager and their respective headquarters within 10 working days after the return of the evaluation data and team members to Hill AFB UT.

1.3.1.7.6. **(Added-ACC)** Prepare an evaluation report after each radar site evaluation IAW guidelines provided in 84 RADES EOI or as determined by the requesting agency. Reports will normally be published NLT 90 days after return of the evaluation team to Hill AFB UT; however, needs of the requesting agency will be considered in determining report timeliness. Distribute copies of the evaluation report to appropriate organizations.

1.3.1.8. **(Added-ACC)** Air Defense Sectors will:

1.3.1.8.1. **(Added-ACC)** Identify special and periodic radar evaluation requirements for all radars within their sector to 1 AF.

1.3.1.8.2. **(Added-ACC)** Coordinate JSS requirements IAW FAA Order 6430.7.

1.3.1.8.3. **(Added-ACC)** Provide 84 RADES support necessary to execute the PREP.

1.3.1.9. **(Added-ACC)** Individual radar units will:

1.3.1.9.1. **(Added-ACC)** Submit requirements for radar evaluations IAW AFI 13-101 to higher headquarters.

1.3.1.9.2. **(Added-ACC)** Schedule/coordinate all radar evaluation services with Numbered Air Forces.

1.3.1.9.3. **(Added-ACC)** Provide operations and maintenance personnel to assist the 84 RADES baseline/commissioning and special evaluations.

1.3.1.9.4. **(Added-ACC)** Designate in writing a PREP Officer and NCO to implement the periodic evaluation program at the unit.

1.3.1.9.5. **(Added-ACC)** Submit problems which the unit is unable to rectify to the appropriate higher headquarters for corrective action.

1.3.1.9.6. **(Added-ACC)** Coordinate airspace clearances as required with appropriate air-space control agencies to support radar evaluation team requests.

1.3.1.9.7. **(Added-ACC)** Prepare and submit to the appropriate flying Wing the request for aircraft support for baseline and special evaluations.

1.3.1.9.8. **(Added-ACC)** Ensure that no other maintenance or operations activity will interfere with the completion of an evaluation in progress.

1.3.1.9.9. **(Added-ACC)** Develop and implement a periodic radar evaluation program (PREP) and procedures along with procedures for completion of the evaluation checklist.

1.3.1.9.10. **(Added-ACC)** Complete and maintain the PREP worksheet.

1.3.1.9.11. **(Added-ACC)** Advise 84 RADES, info HQ ACC/A6O, of any scheduled or unscheduled activities at the re-quester's site that will preclude or conflict with scheduled evaluations.

1.3.2. The lead command is responsible for funding evaluations to support fleet-wide program acquisition and modernization efforts:

1.3.2.1. HQ ACC/DRR will ensure platform modernization or new system acquisition programs include funding to support necessary evaluations.

1.3.2.2. Program element monitors (PEM) will ensure fleet-wide modification programs include funding to support necessary evaluations.

1.3.3. MAJCOMs that operate ground surveillance radar systems will:

1.3.3.1. Program funds for the evaluation of systems under the commander's operational control and related flight support.

1.3.3.2. Provide flight support for evaluating command fixed, tethered and mobile radars.

1.3.3.3. Request services for baseline, special, and system radar evaluations according to [Chapter 4](#).

1.3.3.4. When a fixed radar system is not being evaluated using RADES' automated remote recording and monitoring equipment, the using command must maintain a periodic radar evaluation program.

1.4. ACC is the executive agency for the USAF Radar Evaluation Program. In addition to responsibilities noted in paragraph [1.1.](#), ACC will:

1.4.1. Maintain the Air Force's radar systems evaluation capability through 84 RADES, who will:

1.4.1.1. Conduct baseline, special, system evaluations and continuous performance monitoring and evaluation for ground surveillance radar systems.

1.4.1.2. Support other Service, Department of Defense (DoD) agency, government, or non-government organization requests on a case-by-case basis. Approval authority is HQ ACC/DOY.

1.4.1.3. Conduct radar site surveys, site analysis, and coverage predictions.

1.4.2. Publish procedures for securing radar evaluation services and for defining MAJCOM support responsibilities.

1.4.3. As the Combat Air Forces (CAF) lead command, ACC will establish a periodic evaluation program for mobile surveillance radar systems (i.e., GTACS). This program will be tailored to mission requirements, detected losses in system performance, and/or time since the last evaluation.

1.5. 84 RADES will provide subject matter expertise for planning, development, testing and implementation of radar systems, C2 systems and related matters.

1.6. Waivers.

1.6.1. HQ ACC/DOY, HQ PACAF/DOY, HQ AETC/DOF, and HQ USAFE/DOY will serve as the respective MAJCOM OPR with waiver authority for all waiver requests to this instruction. File a copy of approved written waivers with this volume IAW AFI 33-360, Volume 1, *Air Force Content Management Program--Publications*.

1.6.2. All waiver requests will be submitted in writing through channels to the appropriate MAJCOM OPR.

Chapter 2

REQUIREMENTS

2.1. An initial baseline evaluation is required as soon as possible after a unit completes installation acceptance testing and resolves major exceptions. The radar should be operationally stable and properly connected with its control center. A baseline evaluation and integration to the control center is required before the radar is fully mission capable. Mobile radar systems may require a baseline evaluation if their deployed location becomes fixed.

2.1.1. Re-baseline and integration into the control center is necessary following major repairs, major modifications, or permanent radar relocation or as specified in AFMAN 11-225, *United States Standard Flight Inspection Manual*.

2.1.2. A baseline evaluation, in conjunction with the Federal Aviation Administration (FAA) is required prior to FAA commissioning radars in the Joint Surveillance System.

2.1.3. Monitor performance of previously baselined fixed radars on a continuous basis. Perform a special evaluation when degradation is indicated.

2.2. Developmental Testing (DT)/Operational Testing (OT) Taskings:

2.2.1. Support 46 TS for DT.

2.2.2. Support 605 TS for OT.

2.2.3. Support AFOTEC for OT.

2.2.4. Support 133 TS for DT and OT.

2.3. The 84 RADES shall certify new radar systems prior to integration into the Atmospheric Early Warning System (AEWS) when certification services are requested by NORAD and approved by ACC/DOY and SCW for scheduling.

2.3. (ACC) Evaluation Organization. The 84 Radar Evaluation Squadron (RADES) is the primary evaluation agency for all phases of USAF transportable and fixed ground-based radar systems. The 84 RADES has technical responsibility for all phases of radar testing and evaluation. Its primary responsibility is to perform baseline/special and system evaluations of radars, including joint evaluations of Joint Surveillance System (JSS) sites with Federal Aviation Administration (FAA) personnel. However, the 84 RADES also conducts system evaluations of multiple sensors and assists with C2 systems integration and continuous performance monitoring.

2.3.1. **(Added-ACC)** Evaluation flight support requirements will be identified by the 84 RADES. Aircraft utilized for these flights will be restricted to those meeting radar evaluation criteria. Upon receipt of a request for evaluation flights, the flying Wing will designate the unit to furnish the evaluation aircraft and issue appropriate directives. The Wing will identify the type of aircraft to be used for a radar evaluation as soon as possible to provide necessary planning data to the organizations for route scheduling and airspace acquisition.

2.4. Manpower. HQ AFPC assigns personnel to the 84 RADES to conduct radar evaluation. Normally, enlisted personnel will have a 5-skill level. Upon upgrade, the 84 RADES Commander will ensure the

special experience identifier is in the member's records and ensure an assignment availability code is annotated IAW the ACC stabilized tour guides.

Chapter 3

TYPES OF EVALUATIONS

3.1. Baseline Evaluation. This evaluation is performed to:

3.1.1. Determine optimum configuration of adjustable and selectable features (software and hardware), capabilities and limitations, including airspace coverage. It is tailored to individual radar site and missions and includes effects of weather and terrain on detection and tracking performance. Dedicated flights are required to make this assessment.

3.1.2. Provide a performance database, determine operational parameters, and airspace coverage as a basis for inclusion in the RADES electronic monitoring evaluation system.

3.2. Special Evaluation. This evaluation is performed to:

3.2.1. Assist operating organization in isolating the causes of substandard performance.

3.2.2. Determine the effects of proposed and existing modifications on the operational capability and recommend configuration.

3.2.3. Determine the best site location or positioning of a radar and the optimum setting of adjustable features for use under varying conditions.

3.2.4. Support radar acquisitions, developmental and operational test and evaluation programs, and system integration.

3.3. System Evaluation. This evaluation determines how well multiple sensors integrate into a central facility or system to include assessment of the radar inputs processing portion of the central system; i.e., radar message handling, tracker and display functionality.

3.4. Continuous Performance Monitoring and Evaluation : A continuous and near real-time evaluation process performed on previously baselined radars. The data collected during the baseline evaluation is used for initial pass/fail criteria and establishes a baseline for performance for each individual radar system. This evaluation is performed to:

3.4. (ACC) To achieve maximum effectiveness, a periodic evaluation program must be established to frequently sample the radar's performance. The sampling frequency will be based on the operational performance history of the radar and reliability check results of search and IFF/SIF systems to include Modes 2, 3, C and 4. The program will provide for periodic evaluations for mobile and fixed radar systems.

3.4.1. Continuously monitor/assess radar performance based on short- and long-term trends.

3.4.2. Continuously monitor radar data quality for error-free communication service.

3.4.3. Detect radar performance deviations from established standards.

3.4.4. Alert users of system effectiveness and deterioration in detection capability.

3.4.5. Allow for corrective action to be effected before complete system failure.

3.4.6. **(Added-ACC)** Fixed radar PREPs are performed by 84 RADES personnel assigned to each ADS. The program will be tailored for the JSS/ADS mission requirements, will provide an assessment

of radar system effectiveness, and will record any deterioration of mission capability. The 84 RADES PREP OLs will:

3.4.6.1. **(Added-ACC)** Record, process, and analyze radar and beacon data from each site at least biweekly using PREP radar analysis programs IAW 84 RADES EOI and, if necessary, **Attachment 3 (Added)**, ERS Procedures.

3.4.6.2. **(Added-ACC)** Provide meaningful and timely performance and trend data through monthly reports to the ADS and 84 RADES/DO.

3.4.6.3. **(Added-ACC)** Provide appropriate radar coverage diagrams and other radar analysis service in support of the JSS/SOCC mission.

3.4.6.4. **(Added-ACC)** Contact the Air Surveillance Technician (AST) or FAA Systems Engineer (SE) to ascertain the current site equipment settings when conducting regularly scheduled PREP evaluations.

3.4.7. **(Added-ACC)** Units will establish a periodic evaluation program. This program as a minimum will include the following:

3.4.7.1. **(Added-ACC)** Provide an assessment of radar system effectiveness, and record any deterioration of mission capability. Periodic evaluations will be carried out during the period of unit deployment as well as during in-garrison operations.

3.4.7.2. **(Added-ACC)** Subjective Assessment: The Operations Officer or designated PREP Officer/NCO will ensure radar quality. This will be based on analysis, observations and information gathered on aircraft tracking, detection, permanent echoes, ground returns, clutter, radar performance parameters, weather conditions, and radar height readouts.

3.4.7.3. **(Added-ACC)** The assessment of the mobile radar unit will be made at the beginning of each operations shift by the PREP Officer or designated representative. The single word PREP assessment (satisfactory, marginal, etc.) will be recorded in the Operations Logbook, as appropriate IAW **Attachment 3 (Added)**.

3.4.7.3.1. **(Added-ACC)** A subjective assessment of radar/system capabilities will be made utilizing information gathered IAW the periodic evaluation checklist. A minimum of four consecutive observation readings will be used for each subjective assessment. The single word assessment from section 2 of the checklist best describing system performance will be indicated on the form and likewise included in the log entry recording checklist completion.

3.4.7.3.2. **(Added-ACC)** The Periodic Evaluation Checklist (**Attachment 2 (Added)**) will be maintained on file for a minimum of 90 days after completion and then destroyed IAW DoD 5200.1R/AFI 31-401.

3.4.7.3.3. **(Added-ACC)** Mode 4 Reliability Checks. The Operations Officer will ensure the Mode 4 reliability checks are performed IAW AFI 13-1MCS, Volume 3.

3.4.8. **(Added-ACC)** When unit maintenance personnel cannot determine the cause of equipment performance problems, a special equipment evaluation may be requested IAW AFI 13-101.

3.4.9. **(Added-ACC)** Evaluation Reports.

3.4.9.1. **(Added-ACC)** Baseline, special, and system evaluation reports will use the format and criteria established in 84 RADES EOI guidelines, as appropriate.

3.4.9.2. **(Added-ACC)** The baseline evaluation report describes operational requirements and equipment used to meet these requirements, sitting characteristics, coverage capabilities, and limitations. It also includes recommendations for the most effective configuration of adjustable and selectable equipment features.

3.4.9.3. **(Added-ACC)** Classification of the evaluation report will be IAW the appropriate security classification guide.

3.4.9.4. **(Added-ACC)** Evaluation reports generated by the 84 RADES will be distributed IAW the distribution list maintained at 84 RADES. Agencies can request inclusion on the distribution list through 84 RADES.

3.4.9.5. **(Added-ACC)** Baseline evaluation reports will be retained until superseded. Special evaluation reports will be retained with the most recent baseline evaluation report for radars that have had a baseline evaluation.

3.4.10. **(Added-ACC)** Site Survey. 84 RADES will assist with radar sitting surveys for fixed or transportable radars as requested by ACC/A3Y/A6O and funded. These surveys will normally be used to determine the theoretical radar coverage capability for each location (e.g., coverage diagrams, screening data, etc.). The logistical, communications, and other concerns as well as final site selection are the responsibility of the requester/higher headquarters.

Chapter 4

REQUESTING RADES SUPPORT

4.1. All requests for 84 RADES support will be submitted to HQ ACC/SCW (OPR). The email address is acc.scw@langley.af.mil. HQ ACC/SCW will coordinate the requests with ACC Communications Group (accg.cc@langley.af.mil) and HQ ACC/DOY (acc.doy@langley.af.mil) for prioritization.

4.1. (ACC) All requests for support will be submitted to the 84 RADES/??SCXC. Support approval would be accomplished at the 84 RADES/CC with 505 OG/CD, 505 OG/CC, 505 CCW/CC and ACC A3Y as info. Support disapproval would come from the 505 CCW/CC with recommend disapprove from the 84 RADES/CC, 505 OG/CD, 505 OG/CC, and as info to ACC A3Y.

4.2. All radar evaluation/site survey requests will, as a minimum, contain the following information:

- 4.2.1. Purpose. Define problems and state the reason for the request
- 4.2.2. Location
- 4.2.3. Type of radar or C2 system and associated equipment to be evaluated
- 4.2.4. Desired date for support
- 4.2.5. Mission impact if the evaluation is not performed by the desired date
- 4.2.6. Special items of concern and other pertinent information
- 4.2.7. Points of contact
- 4.2.8. Funding source to conduct requested support. After being tasked, 84 RADES will contact requesting unit to provide cost estimate and secure fund cite. If applicable, include funds for dedicated flights if requestor is not providing aircraft.

4.3. HQ ACC/DOY must review and approve all requests for 84 RADES support, other than radar evaluations and radar site surveys. All requests will be considered on a case-by-case basis with priority given to support the NORTHCOM/NORAD/PACOM (ANR/Hawaii) missions. Other priorities will be to Air Force, other service or DoD agency, other government agency, or non-government agency, in that order. Prioritizations for requests are:

- 4.3.1. Priority 1. Operational systems, off the air
- 4.3.2. Priority 2. Operational system degraded
- 4.3.3. Priority 3. New program
- 4.3.4. Priority 4. Operational system
- 4.3.5. Priority 5. All others

4.4. Forms Prescribed and Adopted. AF Form 847, *Recommendation for Change of Publication.*

RONALD E. KEYS, Lt General, USAF
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(ACC)

RONALD E. KEYS, General, USAF,
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References******U.S. Air Force***

AFI 13-101, *Evaluation of Ground Radar Systems*

AFI 33-360, Volume I, *Air Force Content Management Program--Publications*

AFMAN 11-225, *United States Standard Flight Inspection Manual*

AFMAN 36-2108, *Enlisted Classification*

AFMAN 37-123, *Management of Records*

AFPD 13-1, *Theater Air Control Systems*

AFPD 37-1, *Air Force Information Management*

CFETP 1C5X1 for AFSC 1C5X1, *Aerospace Control and Warning Systems*

Attachment 2 (Added-ACC)

**PERIODIC RADAR EVALUATION PROGRAM WORKSHEET FOR CRC
(PAGE 1 OF 2)**

DATE & TIME _____ SIGNATURE _____

PART I. OBJECTIVE ASSESSMENT (STANDARDS)

1. Daily equipment parameters IAW 31P3-2TPS-75-56WC-1:

a. List MDS for:

CH1 _____ CH2 _____ CH3 _____ CH4 _____ CH5 _____ CH6 _____ Circle satisfactory if within above parameters, unsatisfactory if not.

b. List Normal Receiver Sensitivities for: CH1 _____ CH2 _____ CH3 _____ CH4 _____ CH5 _____ CH6 _____ Satisfactory: All six channels exceed 50 dB Marginal: Five channels exceed 50 dB

Unsatisfactory: Four or less channels exceed 50 dB Circle One: (SAT) (MARGINAL) (UNSAT)

List MTI Receiver Sensitivities: CH1 _____ CH2 _____ CH3 _____ CH4 _____

CH5 _____ CH6 _____ Average exceeds 52 dB (circle one): (SAT) (MARGINAL)

d. UPX-27/37 Presentation (circle one): (SAT) (MARGINAL) (UNSAT) Satisfactory: SIF is 1 NM in trail, centered on radar presentation & presents an unbroken video presentation

Marginal: SIF is greater than 1 NM in trail, not centered on radar presentation, & presents a broken video presentation

Unsatisfactory: No IFF/SIF presentation

e. Refractive Index Inserted (circle YES NO one):

f. Radar Power Output (circle one):

SAT (2.0 to 4.0) MARGINAL (less than 2.0)

g. Radar & IFF/SIF Shutdown Switches Operational: _____

Deviations/Limitations Noted: _____

PART II. SUBJECTIVE ASSESSMENT: RADAR PRESENTATION (Page 2 of 2)

1. WX/ECM Video: Is weather displayed: Yes _____ No _____

Comments: _____

2. Ground Clutter: Normal _____ Abnormal _____

Comments: _____

3. Permanent Echoes and ATC Correlation Checks:

P.E. Coordinates (AZRAN)Actual

P.E. 1 _____ Plus/minus 2 degrees/2 NM

P.E. 2 _____ Plus/minus 2 degrees/2 NM

ATC Track Coordinates Actual

AZRAN _____

AZRAN _____

AZRAN _____

Circle One: (SAT) (UNSAT)

NOTE: If unable to get ATC coordinates, try an adjacent radar station.

4. Blip Scan Ratios & Digital Height Readout (DHRO): Track a low, a medium, and an upper medium aircraft in each 90 degree quadrant for 20 consecutive sweeps. Record search and SIF, Mode C, and DHRO on RCE form.

Overall Blip/Scan Ratio: Radar _____ % SIF _____ % Satisfactory: 75% or greater Marginal: 50-74% Unsatisfactory: 49% or below NOTE:

Upper and lower forced angles must be considered when determining height accuracy.

5. Detect Fade Range:

a. LOW: 0-5000 feet (circle one): (DETECT) (FADE)

(1) Radar Range: _____ /SIF Range: _____

(2) Azimuth: _____

(3) Altitude: _____

b. MEDIUM: 5100-15,000 feet (circle one): (DETECT) (FADE)

(1) Radar Range: _____ /SIF Range: _____

(2) Azimuth: _____

(3) Altitude: _____

c. UPPER MEDIUM: 15,100-25,000 feet (circle one): (DETECT) (FADE)

(1) Radar Range: _____ /SIF Range: _____

(2) Azimuth: _____

(3) Altitude: _____

Attachment 3 (Added-ACC)**84 RADES OL ESR PROCEDURES**

A3.1. (Added-ACC) Any failures of greater than 20 percent of the established standards dictate the following action: Re-evaluate immediately using a new recording and analysis assessment.

A3.1.1. **(Added-ACC)** If failure does not occur again or does occur but can be explained, then no further action is required.

A3.1.2. **(Added-ACC)** If failures occur again with no explanations, i.e., AST, FAA system engineer, site technician, and 84 RADES have been consulted without a positive fix action, the OL will request through the AST that an ESR be opened. The ESR will remain open until radar analysis program results indicate performance capabilities are restored to normal levels, logical explanations have been found, or AST/ASO determine a change of status is warranted.

A3.2. (Added-ACC) Any failures of less than 20 percent of the established standard dictate the following action: Analyze and assess the past 30 days radar analysis results to determine degraded performance trends.

A3.2.1. **(Added-ACC)** If the degraded performance is not a trend but incidental, then no further action is required.

A3.2.2. **(Added-ACC)** If a degraded performance is discovered (i.e., 15 of past 30 days have failed) and there are no explanations, i.e., AST, FAA system engineer, site technician, and 84 RADES have been consulted without a positive fix action, OL will request through the AST that an ESR be opened. The ESR will remain open until radar analysis program results indicate performance capabilities are restored, logical explanations have been found, or AST/ASO determine a change of status is warranted.